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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,614	08/28/2003	Guang Liu	IS01320AP	8296
22917	7590	03/13/2006	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			LOUIS JACQUES, JACQUES H	
			ART UNIT	PAPER NUMBER
			2134	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,614

Applicant(s)

LIU ET AL.

Examiner

Jacques H. Louis-Jacques

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3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9 and 15-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-9 and 15-20 is/are allowed.
- 6) ☒ Claim(s) 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Iwazawa et al [EP 1319574 A2].

Iwazawa et al [EP 1319574 A2] discloses a controller and control method for an electric power steering apparatus. The controller, according to Iwazawa et al, controls an electric motor for detecting a fault in the electric power-assisted steering [system] apparatus. According to Iwazawa et al, there is provided, measuring a voltage pulse width output from an electric power-assisted steering motor (figure 2, abstract, page 3); comparing the measured voltage pulse width output against a commanded pulse width (abstract, page 3); and indicating a fault if a difference in the measured and commanded pulse widths exceeds a predetermined error limit (pages 3 and 4). Note that the controller, according to Iwazawa et al, comprises a pulse width modulation (PWM) circuit for generating a voltage pulse width (page 3).

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3. Claims 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kifuku [6,332,506].

Kifuku discloses a motor driven power steering device. Kifuku discloses measuring a voltage pulse width output from an electric power-assisted steering motor (abstract, figure 1 and column 13); comparing the measured voltage pulse width output against a commanded pulse width (column 13); and indicating a fault if a difference in the measured and commanded pulse widths exceeds a predetermined error limit (figure 1-3, columns 1-2, 13-14). Kifuku also discloses measuring a torque drive current to the electric power-assisted steering motor (figures 1-3) and checking the torque drive current against a commanded torque drive current, and wherein the step of indicating further comprises indicating a fault if a difference in the measured and commanded torque drive currents exceeds a predetermined error limit.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazawa et al [EP 1319574 A2] in view of Raichle [US20040124870].

Iwazawa et al does not particularly disclose defining an acceptable angular relationship between a motor position and a current vector and comparing an angle between the

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measured current vector and the detected motor position. Raichle, on the other hand, discloses a method and apparatus for testing an electric motor (such as an electric power-assisted steering motor) for detecting faults in the motor. According to Raichle, there is provided determining a voltage vector of the electric power-assisted steering motor (abstract), measuring a current vector of the electric power-assisted steering motor (abstract), defining an acceptable angular relationship between the voltage vector and the current vector, comparing an angle between the measured current vector and the determined voltage vector, and indicating a fault if the angle does not meet the acceptable angular relationship. See abstract, figure 3, page 1 and 3. Thus, it would have been obvious to one skilled in the art at time of the invention to be motivated to modify the diagnostic method and system of Iwazawa et al et al by incorporating the features from the method and system of testing of Raichle because such modification, as suggested by Raichle, would provide an effective way of determining the operability of the system.

Allowable Subject Matter

6. Claims 1-9 and 15-20 are allowed.

Response to Amendments

7. The amendments filed on September 29, 2005 have been entered and carefully considered by the examiner.

Claims 1, 10-14 have been cancelled; claims 2-4, 6, 8-9, 15, 16, 17, 19 and 20 have been amended, wherein claims 3, 4, 6, 8, 15, 16, 17, and 19 are written into independent form.

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New claims 21-23 are being presented. Claim 21 recites the limitation of previously presented claim 4.

Dependent claim 4 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Newly added claim 21 recites the limitations of claim 4 without the limitations of the base and any intervening claims. Accordingly, new claims 21-23 are being rejected.

Claims 2-9 and 15-20 are allowed.

On November 21, 2005, the examiner contacted Applicant's representative in an attempt to discuss such new ground of rejection, and possibly put the application in condition for allowance, however, such attempt was not successful. Applicant's representative requested a rejection on the record.

This office action is made non-final.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4,834,201	Miyazaki et al	May 1989
4,972,320	Sugiura et al	Nov. 1990
5,504,679	Wada et al	Apr. 1996
5,659,472	Nishino et al	Aug. 1997
5,920,174	Kawada et al	Jul. 1999

6,054,827

Takatsuka et al

Apr. 2000

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H. Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques
Primary Examiner
Art Unit 3661

/jlj

Jacques H. Louis-Jacques
JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER